

REHAK, Svatopluk; VRANA, Milan

The nature of reactive hypertension during the course of forced increase in the eye volume. Cesk. oft. 17 no.4/5:364-368 J1 '61.

1. Ocni klinika KU v Hradci Kralove, prednosta prof. MUDr. M. Klima
Patofyziologicke oddeleni USOL, Praha, reditel Dr. Sc. J. Malek.

(INTRAOCULAR PRESSURE physiol)

REHAK, Svatopluk; VRANA, Milan

Determination of the outflow capacity of the eye during the course of reactive hypertension. Cesk. ofth. 17 no.4/5:369-374 J1 '61.

1. Ocní klinika v Hradci Králové, prednosta prof. dr. M. Klíma, a patofyziologické odd. USOL Praha, ředitel Dr. Sc. J. Malek.

(INTRACULAR PRESSURE physiol)

ACC NR: AP6026687

SOURCE CODE: UR/0181/66/008/008/2374/2381

AUTHOR: Kurova, I. A.; Vrana, M.; Vavilov, V. S.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Observation of the motion of electrical domains in *n*-type germanium with a partially compensated upper acceptor level of gold

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2374-2381

TOPIC TAGS: electron capture, electron donor, temperature dependence, electric field

ABSTRACT: The motion and velocity of a strong electrical field (domain) was observed in samples of germanium containing Au and Sb in the range of temperatures between 15 and 35°K. The electrical instability is due to the dependence of electron capture in the upper acceptor level of the gold ($E_c = 0.04$ ev) on the magnitude of the electric field. When the temperature and background increase, the domain accelerates. In the region of thermal generation of electrons in the sample, velocity depends exponentially on temperature and the activation energy is ~ 0.04 ev. In the region in which electrons are generated primarily by the thermal background from the gold acceptor level, the temperature dependence of the velocity is exponential for all values of the background, and the activation energy is ~ 0.016 ev, which is close to the temperature de-

Card 1/2

ACC NR: AP6026687

pendence of the coefficient of electron capture on doubly negative charged gold atoms at these temperatures. At lower temperatures, domain motion depends but slightly on temperature, and agrees with the theoretical equation of B. K. Ridley (*Phys. Let.*, 16, 105, 1965). The voltampere characteristic is linear and there is no instability below 15°K because conductivity in the samples is governed primarily by the ionization of carriers from the shallow donor level, which is filled by electrons as a result of optical recharging. It is shown that inhomogeneities in the sample strongly affect the nature of domain motion. The domain forms in the region of the largest stationary field in the sample and travels toward the field, disappearing at the anode or in the region of the weak field ahead of the anode. The authors thank V. L. Bonch-Bruyevich for discussions and V. V. Ostroborodova and N. I. Danilova for preparing the crystal samples. Orig. art. has: 10 figures.

SUB CODE: 20/

SUBM DATE: 10Jan66/

ORIG REF: 006/

OTH REF: 008

Card 2/2

BURIAN, V.; VYSOKA-BURIANOVA, B.; VRANA, M.; KYSELOVA, M.

A new combined vaccine against *Bordetella parapertussis*, diphtheria, tetanus and pertussis. *Cesk. epidem.* 14 no.6:339-345 N '65.

1. Ustav ser a ockovacich latek, klin. epid. odbor, Praha, Lekarska fakulta hygienicka Karlovy University, katedra epidemiologie, Praha a Ustav epidemiologie a mikrobiologie, Praha.

VRANA, Milan, promovany geolog; VRELA, Jaroslav, promovany geolog

Influence of atmospheric precipitations on the results of
pumping tests. Geol pruzkum 6 no. 3:85-86 Mr '64.

1. Vodni zdroje, Prague.

PEKAREK, J.; VRANA, M.

Effect of pertussis vaccination on anaphylactic shock in mice and rats. J. hyg. epidem. 7 no.1:28-36 '63.

1. Institute of Sera and Vaccines, Prague.
(PERTUSSIS VACCINE) (ANAPHYLAXIS) (HISTAMINE)

VRANA, Otakar

Geography of hop cultivation in the North-Bohemia region. Sbor zem
68 no.1:36-40 '63.

VRANA, O.

"Geographical research on the character of settlements on the Great Schutt Island"

p. 197 (Geographical Institute, Slovak Academy of Sciences) Vol. 9, no. 4, 1957

SO: Monthly Index of East European Accession (EEAI) LC, Vol. 7, no. 5, May 1958

VRANA, C.

Frantisek Vitascek's Fysicky zemepis, dil III. Rostlinstvo a zivocisstvo
(Physical Geography, Pt. 3, Plants and Animals); a book review.
p. 157. Ceskoslovenska spolecnost zemepisna, SROVNIV, Praha.
Vol. 61, no. 2, 1956.

SOURCE: East European Acquisitions List, (EEAL), Library of Congress
Vol. 5, no. 12, December 1956.

VRANA, OTAKAR.

Vrana, Otakar Zaklady sidelnih zemepisu. (Vyd. 1.) Praha, Prirodovedecké nakladatelství, 1950. 60 p. (Basic principles of the geography of population)

SO: Monthly List of East European Accessions, L C, Vol.3 No. 1 Jan '54 Uncl.

VRANA, Stanislav

"Evolution of metamorphic belts" by A. Miyashiro. Reviewed by Stanislav Vrana. *Vestnik ust geolog* 37 no.6:487-488 N '62.

VRANA, Vladimir

Patent exclusiveness of industrial articles. Ratsionalizatsiia
13 no.7:1-3 '63.

VRANA, V

"Capitalist patent law and the socialist law on invention"

p. 1 (Ratsionalizatsila) Vol. 7, no. 5, May 1957
Sofia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) IC, Vol. 7, no. 4,
April 1958

VRANA, V.

Polish-Bulgarian cooperation in the field of invention and rationalization. p. 4. RATIONALIZATSIIA. (Institut za ratsionalizatsiia) Sofiya Vol. 6, No. 1, Jan. 1956

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5, No. 11, November 1956

VRANA, V.

Engineer Kovlaov's Method Applied in the Activity of Rationalizers.
Lekha Promishlenost (Light Industry), #11:40: Nov 54

VRANA, Vl.

A national competition for the rationalization of the economy
of the electric and thermal power. Tekh delo no.437:2 4 Ag
'62.

VRANA, Vl.

Copyright in the field of inventions and rationalization, and its
protection. Ratsionalizatsiia no.10:1-4 '62.

VRANA, Vl.

Rationalizer radio competition for metal saving concluded.
Ratsionalizatsiia 13 no.6:37 '63.

VRANA, Vl.

Conference on the unification of patents, classification,
and documentation, held in Sofia. Ratsionalizatsia no.12:
34 '62.

VRANA, Vl.

For the development of the rationalization movement in farming.
Ratsionalizatsiia 13 no.2:6-9 '63.

VRANA, Vl.

Towards a new rise in the field of inventiveness and rationalization.
Ratsionalizatsiia 11 no.12:1-4 '61.

VRANA, Vladimir, sutrudnik

patent licence contracts. Ratsionalizatsiia 14 no. 1:
1-4 '64.

I. Institut za izobretenia i ratsionalizatsii.

VRANA, Vladimir

Decisions on rationalization proposals, and procedure for
submitting objections to them by virtue of paragraph 65 of
the Regulation. Ratsionalizatsiya 14 no.6:17-18 '64

1. Institute of Innovations and Rationalization.

23275
Z/039/60/021/012/002/002
E192/E382

9.19/4 (1127)

AUTHORS: Černohorský, Dušan and Vrána, Vratislav, Engineers

TITLE: A Shortwave Vertical Antenna Operating with a
Progressive and a Standing Current Wave

PERIODICAL: Slaboproudý obzor, 1960, Vol. 21, No. 12,
pp. 730 - 734

TEXT: A wideband vertical antenna operating at short waves
is analysed. The top load of the antenna (Fig. 1) consists of
a resistance R and a terminating capacitance C . The
current flowing through the capacitance C closes to the
receiver through the earth surface and produces some radiation.
The power lost in the earth surface and the power radiated
can be taken into account by means of two equivalent resistances R_{e1} and R_{e2} , which are connected in series with C . In
general, the second component can be neglected, i.e. $R_{e2} = 0$.
The load of the antenna is therefore given by :

Card 1/7

23275
 Z/039/60/021/012/002/002
 E192/E382

A Shortwave Vertical Antenna

$$Z = R + R_{el} - j \frac{1}{\omega C} \quad (1)$$

If $C \rightarrow \infty$, it can be assumed that the antenna is terminated with an ohmic resistance and the condition of the appearance of a progressive wave is therefore given by:

$$R + R_{el} = Z_o \quad (2)$$

where Z_o is the characteristic impedance of the antenna; this is approximately expressed by:

$$Z_o = 138 \left(\log \frac{2\ell}{d} - k \right) \quad (3)$$

where ℓ is the length of the antenna,
 d is the diameter of the antenna conductor and
 Card2/7 k is a constant depending on the ratio of the antenna

23275
Z/039/60/021/012/002/002
E192/E582

A Shortwave Vertical Antenna

length to its height above the Earth ℓ_1 .

However, in general, it is not possible to meet the condition expressed by Eq. (2). It is therefore not possible to get a perfect progressive wave and a standing wave is also produced. In general, the terminating capacitance is of the order of tens of pF so that its reactance in the band of short waves is of the order of hundreds of ohms. The antenna cannot easily be matched and the standing-wave ratio is quite high. However, this situation can be overcome at least at one frequency by connecting a series inductance L to the terminal of the antenna. Now, at the resonant frequency of LC the top terminal of the antenna is effectively grounded and the standing wave is negligible. From the above, it is seen that, in general, a combination of progressive and standing wave is produced in the antenna so that its current can be expressed by:

$$i_z = I_o \{ (1 + p) \cdot e^{j\alpha(\ell - z)} - j2p \cdot \sin[\alpha(\ell - z)] \} \quad (5)$$

Card 3/7

23275
z/039/60/021/012/002/002
E192/E382

A Shortwave Vertical Antenna

where $\alpha = 2\pi/\lambda$,
 z is a variable coordinate measured from the lower
terminal of the antenna,
 p is the current reflection coefficient for the top
terminal of the antenna,

$I_o = I'_o \exp(-j\alpha z)$ is the amplitude of the wave at the
end of the antenna and
 I'_o is the amplitude of the current at the input of the
antenna.

On the basis of the above, it can be shown that the field
produced by the standing current wave is given by:

$$E_s = \frac{j 60 I_{os} \cdot -j \alpha r [\cos(\alpha z \cos \theta) - \cos \alpha z]}{r \cdot \sin \theta} \quad (8)$$

Card 4/7

23275

Z/039/60/021/012/002/002
E192/E382

A Shortwave Vertical Antenna

where I_{os} is the amplitude of the current wave which is
expressed by:

$$I_{os} = - I_o \cdot j \cdot 2p \quad (9)$$

On the other hand, the field due to the progressive wave is
given by:

$$E_p = \frac{-j \cdot 60 \cdot I_{op} e^{-jar}}{r \cdot \sin \theta} \left\{ \cos \theta \cdot \sin(\alpha \ell \cos \theta) + \right. \\ \left. + j [e^{j\alpha \ell} - \cos(\alpha \ell \cos \theta)] \right\} \quad (10)$$

where I_{op} is expressed by:

$$I_{op} = I_o (1 + p) \quad (11)$$

Card 5/7

23275
Z/039/60/021/012/002/002
E192/E382

A Shortwave Vertical Antenna

The total field is given by the sum of the components expressed by Eqs. (8) and (10). On the basis of the above formulae, it was possible to determine the radiation diagrams and input impedances for the antenna with and R , L , C load. From these diagrams it is found that the radiation patterns of the antenna do not differ substantially from those of a similar antenna with a simple standing wave; the only substantial difference is observed in the shape of the side lobes. On the other hand, the presence of a progressive wave in the antenna current results in a "smoothing" effect of the input resistance of the antenna. It is found, in particular, that with a suitable L and $R = R_o$ (where R_o is the characteristic resistance of the antenna) the impedance is characteristic at frequencies between 4 and 14 Mc/s is comparatively uniform. X

Card 6/7

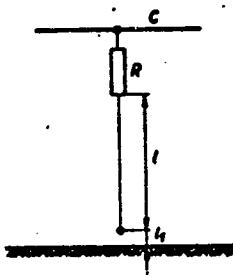
A Shortwave Vertical Antenna

23275
Z/039/60/021/012/002/002
E192/E382

There are 8 figures and 4 references: 1 Czech and 3 non-Czech.

SUBMITTED: May 5, 1960

Fig. 1:



X

Card 7/7

CERNOHORSKY, Dušan, inz.; VRANA, Vratislav, inz.

Simplifying the calculations of antenna radiation patterns.
Slaboproudý obzor 21 no.8:454-459 Ag '60. (EEAI 10:1)
(Radio)

VRANA, V.

"Our cooperation with the German Democratic Republic in the field of invention,
samples, and trade-marks."

p.3, (Ratsionalizatsiia, Vol. 7, no. 2, Feb. 1957, Sofia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

VRANA, V.

Significance of patents for our socialist economy.
p. 1 (RATIONALIZATSIIA) Vol. 7, no. 10, Oct. 1957,
Sofiia, Bulgaria

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 3,
March 1958

VRANA, V.

VRANA, V. Protection of patent rights for suggestions in rationalization, technical improvements, and inventions according to the amendments in the Criminal Code. p.6.

Vol. 6, no. 3, Mar. 1956 RATIONALIZATSILA Sofiya, Bulgaria

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5, No. 10
Oct. 1956

VRANA, V.

New law on rationalization and inventions in the Hungarian People's
Republic. p. 6

RATSIONALIZATSIIA. Vol. 6, No. 4, Apr. 1956

Sofiya, Bulgaria

So. East European Accessions List Vol. 5, No. 9 September, 1956

VRANA, V.

VRANA, V. The official duties of the engineers and technical workers and their rationalization suggestions. p. 5.

Vol. 6, No. 6, June 1956.

RATSIONALIZATSIIA

TECHNOLOGY

Sofia, Bulgaria

So: East European Accession, Vol. 6, No. 2, Feb. 1957

VRANA, V.

VRANA, V. Results from the competition on small dams, for working out a new,
more exact type of designs and estimates. p. 11. Vol. 6, no. 7, July 1956.
RATSIONALIZATSIA, Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL) Vol 6, No. 4--April 1957

VRANA, V.

VRANA, V. Role and tasks of the Institute for Rationalization in the field of
invention and rationalization. p. 1.

Vol. 6, No. 10, Oct. 1956.

RATSIONALIZATSIIA.

TECHNOLCGY

Sofia, Bulgaria

So: East European Accession, Vol. 6, No. 3, March 1957

VRANA, V.

"Experimenting With Rationalizers' Suggestions", P. 3, (RATSIONALIZATSIIA,
Vol. 3, No. 10/11, Oct./Nov. 1953, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12,
Dec. 1954, Uncl.

VRANA, Vl.

Inventors and rationalizers, fighters for technological progress.
Ratsionalizatsiia 11 no.8:5-6 '61.

(Inventions) (Industrial management)

VRANA, Vl.

A new industrial method for the preparation of sodium sulfide. Ratsionalizatsiia no.6:21 '62.

VRANA, VI.

Conference on the rationalization activities in the dressing,
mining, and metallurgic enterprises. Ratsionalizatija no.6:38-39
'62.

VRANA, Vl.

Let us improve our work in the rationalization competition.
Ratsionalizatsiia no.6:7-9 '62.

VRANA, Vl.

The Bulgarian rationalizer competition for the economy of electric
and heat energy. Elektroenergiia 13 no.7:27-28 Jl '62.

VRANA, Vl.

The rationalization activities in the Plant 10. Ratsionalizatsiia
no.7:37-38 '62.

VRANA, Vl.

Organizational and technical innovations, and rights of their
authors. Ratsionalizatsiia no.8:7-9 '62.

VRANA, Vl.

Personal material interest in the invention and rationalization
activities. Rationalizatsiia no.2:5-7 '62.

VRANA, Vladimir

First results of the competition for the economy of metals.
Tekh delo 13 no.429:2 2 Je '62.

VRANA, Vl.

Rationalizer Youth Competition conclude successfully. Rationalizatsia
ll no.9:38-39 '61.

(Industrial management)

VRANA, VI.

Let us make use of the Soviet experiment for the improvement
and extending of the work of public construction bureaus.
Ratsionalizatsiia 13 no.1:16-18 '63.

2/039/60/021/08/002/032
E140/E563

AUTHORS: Cernohorský, Dušan, Engineer, Vrána, Vratislav, Engineer

TITLE: Simplified Calculation of Antenna Patterns

PERIODICAL: Slaboproudý obzor, 1960, Vol 21, No 8, pp 454-459

ABSTRACT: A graphical-numerical method is given for the calculation of antenna radiation patterns. The current distribution on the antenna is substituted by a piecewise-constant distribution. It is assumed that the Earth has infinite conductance. The following cases are considered: radiation of a perpendicular conductor over the surface of the Earth; radiation of a horizontal conductor over the surface of the Earth; radiation of a capacitance-loaded antenna.

There are 9 figures, 3 tables and 7 references, 2 of which are Czech, 1 Soviet, 1 German and 3 English.

SUBMITTED: March 26, 1960

Card 1/1

BICHEVOY, Ya.V.; VRANA, V.F.; KARTASHEVA, N.M., red.; TRUKHINA, O.N.,
tekhn. red.

[Succulent forage the year round] Sochnye karma - kruglyi god.
Moskva, Sel'khozizdat, 1962. 109 p. (MIRA 16:3)

1. Sekretar' rayonnogo komiteta Kommunisticheskoy partii
Sovetskogo Soyuza Novo-Aleksandrovskogo rayona Stavropol'-
skogo kraya (for Bichevoy). 2. Glavnyy zootehnik kolkhoza
"Rossiya" Novo-Aleksandrovskogo rayona Stavropol'skogo kraya
(for Vrana).

(Feeds)

VRANA, Zdenek, inz.

Examination of the thickness of cover in open mines.
Uhli 4 no. 5:164-168 My '62.

1. Dul Sverma, Holesovice u Mostu.

VRANA, Z.

"Present methods of evaluating efficiency and utilization of mining machinery in open-pit lignite mines." p. 78.

UHLI. (Ministerstvo paliv). Praha, Czechoslovakia, Vol. 1, No. 3, Mar. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8, August 1959.
Uncla.

VRANA, Z.

A contribution to the problem of cumulative blasts in open pits. n. h
(VHL, Vol. 7, no. 1, Jan. 1957, Praha, Czechoslovakia.)

cc: Monthly List of East European Accessions (EVAL) IV, Vol 4, no. 12, Dec. 1957. Incl.

VRANA, Z.

Determining the depth limit in strip mining from the geologic point of view. p. 35.

UHLI. (Ministerstvo paliv)
Praha, Czechoslovakia
Vol. 1, no. 2, Feb. 1959.

Monthly list of East European Acessions (EEAI), LC, Vol. 8, no. 7
July 1959
Uncl.

VRANA, Z.

TECHNOLOGY

Periodicals: ELEKTROTECHNIK Vol. 14, no. 3, Mar. 1959

VRANA, Z. We are building a machine factory in Korea. p. 86.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5,
May 1959, Unclass.

VRANA-HEJNALOVA, D.

Effect of vegetative water in potatoes on butanol-acetone fermentation. p. 32.
(Kvasny Prumysl, Vol. 3, No. 2, Feb 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions(EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

VRANAK, M.

Duty of the tourist press; Press Day. p. 321

KRASY SLOVENSKA no. 9, Sept, 1955

CZECHOSLOVAKIA

SOURCE: EAST EUROPEAN ACCESSIONS LISTS VOL. 5, no. 7, July 1956

GROCH, J.; technicka spolupraca SABADOSOVA, S.; VRANAYOVA, E.

Hygienic problems of the organization of the daily regimen in school day-hostels. Cesk. hyg. 7 no.9:522-527 0 '62.

1. Ustav hygieny a epidemiologie Lekarskej fakulty UPJS, Kosice.
(SCHOOL HEALTH)

GROCH, Jiraj; za technickej spoluprace VRANAYOVEJ, E.; SARAYOVEJ, S.

Estimation of the time schedule for young school children. Cesk. pediat.
17 no.4:368-372 Ap '62.

1. Ustav hygieny a epidemiologie Lek. fak. University P. J. Safarika
v Kosiciach, prednosta MUDr. R. Pospisil, CSc.

(CENTRAL NERVOUS SYSTEM physiol)
(SCHOOL HEALTH)

VRANCEA, A.

I. CLAUDIAN, Bull Soc Med Bucarest, 1938, 20, 147-153

VRANCEA, S.; POPET, Aurelia; GHISOIU, Carmen

Methodological aspects of the biological standardization of
corticotropin. Stud. cercet. endocr. 15 no.2:133-140 '64.

VRANCEANU, G., acad. prof.

Alexandru Orascu (1817-1894). Studii cerc mat 15 no. 3:429-430
'64.

~~100-100-66~~

Sem. Vektor. Tenzor. Analizu.] 1, 12-101 (1933)], P. Rachevsky [*Ibid.* 126-142 (1933)], and H. Schapiro [*Ibid.* 162-173 (1933)]. First, certain of their results are refound by a new approach emphasizing either the existence of a set of invariant equations or of invariant first integrals of the differential equations of the paths defining the space. In the subprojective case (the chief interest of Kagan and his school) use is made of the device of projecting the pole to infinity instead of placing it at the origin. Then, spaces $n-m-1$ times projective with an $(m-1)$ dimensional linear space as pole are treated to the extent of finding the form of the fundamental affine connection in the special coordinates with pole at infinity and in finding certain forms of Riemann metric which give rise to them. Finally the necessary and sufficient conditions for a poled $n-m-1$ times projective space and for a general $n-2$ times projective space are written, the former in invariantive form.

J. L. Vanderslice (College Park, Md.)

Source: Mathematical Reviews,

Vol. 11 No. 3

J. L. Vanderslice (College Park, Md.)

u. G. *Leçons de Géométrie Différentielle*
Confluences. Formes de Pfaff. Groupes can-
nivariants et équivalence. Espaces à connexions
Espaces de Riemann. Espaces à connexions

2. Hucarest, 1947. 42-61
thoroughly modern and scholarly treatise on
Pfaffian systems presented with considerable originality
and with the author's nonholonomic prelections
primarily for the specialist. The style is rather
id discursive. Whenever possible, a naive atti-
tude toward the subject matter, in other words,
is preferred to elegance, humor and tongue-
in-cheek devices. The reader benefits from this
as the methods of both Lie and Cartan (tensors
) are used, with emphasis the connecting links
of congruences, Pfaffians. This includes the simplest
of tensors, Pfaffians, bilinear invariants, and
local forms; systems of congruences (ennuples)
details. Chapter II. Finite continuous groups
to a complete and unbacktracked presentation
of Cartan viewpoint including even such topics
as Cartan's theory of the structure tensor of any C_1 , and
on of all primitive groups in two variables.
Invariants and equivalence. The Cartan approach
of Pfaffian systems is developed and applied
to concrete and analytic problems such as invap-
tions, equivalence of webs (textile geometry) and
differential equations of first and second order.
An aspect of Pfaffian theory which is not widely
known is weakly understood. Fortunately the
author's treatment of this subject is very good.

Source: Mathematical Reviews, Vol. 27 No. 5

the notion of affine class. Besides the standard treatment of conformal transformations. Also, notable is the concept of group action. The methods involve the problem of equivalence of structures and extensive detailed discussions of the theory for good measures structure equations. Con- nect- ing the space of one chart as familiar discipline with extreme and organized ways of Euclidean space is an important step. In author takes the Cartan- most part Weil and proves envelopes a uni- hedral the more special and of 1 Thomas are Some of the develop- ments of the present case. An outline of the proof of the main results The pro- position of the main the- orem is and invariance of Euclidean space (College Park, Md.). 627

Source: Mathematical Reviews, 2/22 Vol 9 No 9

311

3
2
C

Vinberg, G. Classification des groupes de Lie de rang
n. (Russian) [Report Dep. Boulâne Stud. Cerc. Mat. I.
p. 1-100, 1968. (Russian and French summaries)]

Classification of Lie groups of rank n. (Russian) [Report Dep. Boulâne Stud. Cerc. Mat. I. p. 1-100, 1968. (Russian and French summaries)]

VRANČE AND GEORGHE

Vrăceanu, Gheorghe. Lectii de geometrie diferențială. Vol. II. Spatiul lui Cigan. Conexiuni conforme. Tensori de ai dodea ordin. Subspazi. Spatiu neotonome. Ecuații cu derivate parțiale de către ordin. Geometrie diferențială globală. Lectures on differential geometry. Vol. II. Cigan space. Conformal connections. Tensors of second order. Subspaces. Non-riemannian spaces. Partial differential equations of the second order. Global differential geometry. Lecture notes.

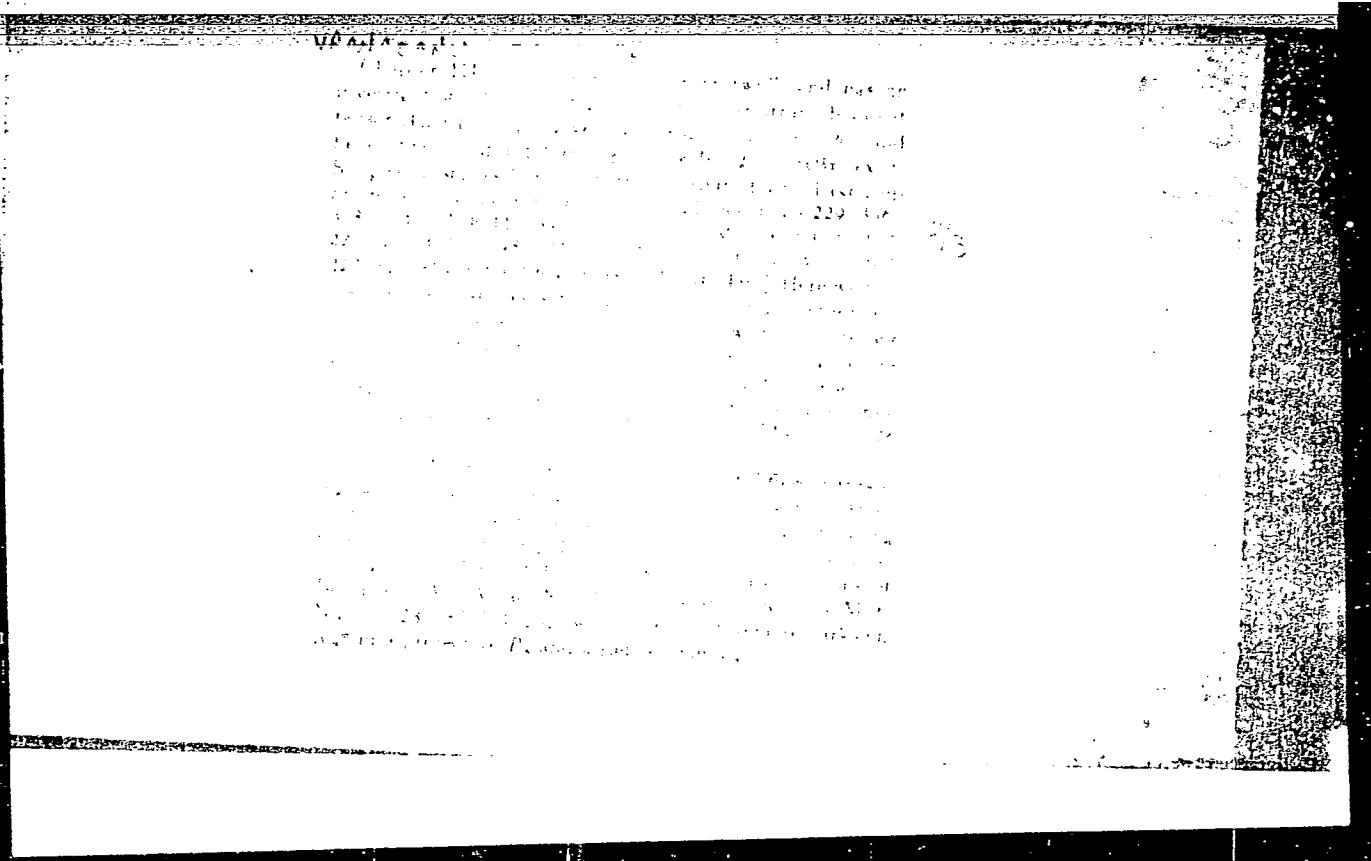
I - F/W

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001961210012-8"

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001961210012-8



APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001961210012-8"

which determine a nonholonomic constraint

✓ *Vrâncioanu, Gheorghe. Lectii de geometrie diferențială. I - F/N
v. 1977. Forme ale lui Pfaff. Grupuri con-

Vrânceanu, G. Sur la réduction à une forme canonique
des équations des courbes auto-parallèles d'un espace

A₂. Com. Acad. R. P. Române 2 (1952), 479-484.
(Romanian, Russian and French summaries)

The differential equation of the geodesics of a space
A₂ of symmetrical affine connection is

$$\frac{d^2y}{dx^2} = a\left(\frac{dy}{dx}\right)^2 + b\left(\frac{dy}{dx}\right)^2 + c\frac{dy}{dx} + d,$$

where a, b, c, d are functions of x and y. A point transformation can reduce two of these coefficients to zero. The cases a=d=0 and a=c=0 are singled out and an application is made to the geodesics of a Riemannian surface V₂.
D. J. Struk (Cambridge, Mass.).

1 - F/W

VRANCEANU, G.

"The Calculation of time and the dosage of rotary treatment in X-ray therapy. p. 19"
"BULETIN STIINTIFIC, Vol. 4, no. 1, Jan./Mar. 1952, Bucuresti, Rumania.

SO: Monthly List of East European Accessions, L.C. Vol. 2, No. 11, Nov. 1953, Uncol/

VRANCEANU, G.

Mathematical Reviews
Vol. 14 No. 11
December, 1953
Geometry.

Vrănceanu, G. On spaces with non-Euclidean affine connection with a maximal group of transformations into itself. Acad. Repub. Pop. Române, Bul. Ști. A. 1, 813-821 (1949). (Romanian, Russian and French summaries)

An affinely connected space which is not euclidean permits at most an n^2 -parameter group of automorphisms. The author exhibits the form to which the connection of spaces with maximal group can be reduced as well as the form of the automorphic group itself.

J. L. Vanderslice.

VRANCEANU, G.

✓

Vrănceanu, G. Sur une équation arithmétique. Com. Acad. R. P. Române 3 (1953), 5-8. (Romanian.)

Russian and French summaries)

Let N^2 have (in decimal notation) as last digits precisely the n digits of N . Then N satisfies the diophantine equation $(*) N^2 - N = A \cdot 10^n$ with some integral A . For every integer n , Pompeiu [Acad. Repub. Pop. Române, Bul. Sti. Secț. Sti. Mat. Fiz. 4 (1952), 1-5; MR 15, 602; see also Dickson, History of the theory of numbers, v.1, pp. 458-459] has shown that there are two solutions N and N' , satisfying $N+N' \equiv 10^n+1$. The author gives a proof of these statements, generalizes $(*)$ to $(**)$ $N^2 - kN = A \cdot 10^n$ and obtains the result that $(**)$ with $k \in \{-1, 1, 3\}$ contains only two lattice points (N, A) with positive coordinates less than 10^{n+1} . *E. Grosswald.*

✓
Samer

Vranceanu, G. Sur les espaces riemanniens comme groupes de stabilite us T_n . (1953) Math. Debrecen 3 : 1953 : 24-32
1954

The group of motions and the stability group of \mathcal{V}_n have at most $\frac{1}{2}n(n+1)$ and $\frac{1}{2}n(n-1)$ parameters respectively. Special results were obtained by Fubini, Egoroff and the author (cf. the reviewer's Bulletin calculus, second ed. "to appear", p. 348). It is proved here that the special symmetrical \mathcal{V}_n of $n \geq 4$ that have an eight parameter group of motions (see the ref. [1], 8) with this property

J. A. Schouten (Eps)

Vrănceanu, G. Sur les groupes de mouvement d'un espace de Riemann à quatre dimensions. Acad. Române. Publ. Române. Stud. Cerc. Mat. 4, 121-153 (1953). (Romanian. English summary.)

In the first section of this paper the Riemannian \mathcal{M}_4 with a curvature group G is considered. It is shown that G is isomorphic to $SL(4, \mathbb{R})$ (see also S. S. Chern, *Trans. Amer. Math. Soc.* 10, no. 3, 1908). In the second section it is shown that the curvature group G of a Riemannian space \mathcal{M}_4 is isomorphic to $SL(4, \mathbb{R})$ if and only if \mathcal{M}_4 is locally AdS_4 (see also S. S. Chern, *Trans. Amer. Math. Soc.* 66, 793-796, 1949). In these Rev. Tr. 211, it is also shown that if we pass from a space \mathcal{M}_4 with a constant curvature with groups G , G is isomorphic to $SL(4, \mathbb{R})$ if and only if the set of parameters of the space \mathcal{M}_4 is a closed set, where the parameters are the coordinates of the space \mathcal{M}_4 .

SECTION ONE
2/1
Sufficient conditions for the existence of a metric
on the manifold M are given by the following theorem.

Theorem: Let M be a differentiable manifold. Then there exists a metric on M if and only if there exists a family of functions $\{g_{ij}\}$ on M such that g_{ij} is a symmetric function of x^i and x^j and the metric tensor g_{ij} is positive definite, where g_{ij} represents a metric of $D_{ij} = g_{ij} dx^i \otimes dx^j$.

VRANCIANU, G., prof. acad.

On the isometric correspondence of two Riemannian spaces of $n-1$ category. Studii cerc mat 16 no.10:1207-1209 '64.

VRANCEANU, G.

"Sur les espaces V_n a groupe simplement transitif." Revue de Matematiques et de Physique, Vol. 2, 1954

Vrăncescu, Gheorghe. Sur les espaces à connexion affine partiellement projectifs. Czechoslovak Math. J. 4 (79). 1954. 283-286. (Russian summary)

1 - F/W

An affine A_n is said to be partially projective of order $n-p$ if its self-parallel curves given by

$$\frac{dx^i}{dt} = \Gamma^i_{jk} \frac{dx^j}{dt} \frac{dx^k}{dt}$$

can be expressed by $n-p$ linear equations and $p-1$ equations which need not be linear, $p > 1$. If $p=1$ the A_n is projective euclidean. It is shown that, if the A_n has in every hyperplane the maximum number ∞^{n-1} of self-parallel curves, it is projective euclidean (and conversely), if it has a family of

$$\frac{\partial \Gamma_{ab}}{\partial x^r} + \frac{\partial \Gamma_{br}}{\partial x^a} + \frac{\partial \Gamma_{ar}}{\partial x^b} + \Gamma_{ac}^r \Gamma_{br}^c + \Gamma_{bc}^r \Gamma_{ar}^c + \Gamma_{ac}^r \Gamma_{br}^c = 0, \quad \text{MS}$$

D. J. Struk (Cambridge, Mass.)

Vrănceanu, G.

Vrănceanu, G. Propriétés différentielles globales des
espaces à groupe maximum G_a . Acad. Repub. Pop.
Romine. Bul. Sti. Ser. Sti. Mat. Fiz. 6, 49-59 (1954) MS
(Romanian. Russian and French summaries)
The same spaces G_a with an invariant Pfaffian and a

1 - P/W

by coefficients

$$\Gamma_{11}^1 = \mu, \quad \Gamma_{11}^k = \rho, \quad \Gamma_{1k}^1 = 0, \quad \Gamma_{1k}^i = (\alpha + \beta x^k), \quad \Gamma_{1k}^j = 0$$

($h, k = 2, \dots, n$; μ, ρ, λ constants).

This has been shown in the author's "Lectures on differential geometry," v. II, [Acad. Repub. Pop. Române, 1951, p. 66, JFR 15, 1949]. In the present paper we find expressions for the auto-parallel curves of these A_s for the case without torsion ($\alpha = 0$); there are three cases depending on the character of the roots of the quadratic equation $x^2 + rx - \lambda = 0$. It is also shown, by a suitable transformation, that A_s can be given constant connection coefficients. The structure of the G_s is analyzed, and it is demonstrated that there exist two symmetrical spaces in the sense of Cartan, given by

$$\Gamma_{11}^1 = \Gamma_{1k}^1 = \Gamma_{1k}^i = \Gamma_{1k}^j = 0, \quad \Gamma_{11}^i = \pm x^k$$

($h, k = 2, \dots, n$; $i = 1, \dots, n$).

D. J. Struik (Cambridge, Mass.)

SM

Vrănceanu, G. Sur les invariants des espaces à à
connexion linéaire Acad. R. P. Române Bull. Sti
mat. Mat. Fiz. 6 (1954) 772-787 (Romanian
with Russian and French summaries)

Given a space \mathcal{E}_4 with connection $\Gamma_{\mu}^{\nu} = A_{\mu}^{\nu}x^i + C_{\mu}^{\nu}$,
where A_{μ}^{ν} and C_{μ}^{ν} are constants, then the A_{μ}^{ν} consti-
tute a tensor with respect to linear transformations of
the x^i . A related symmetric d-tensor $V_{\mu_1 \mu_2 \mu_3 \mu_4}$ is defined by

$$V_{\mu_1 \mu_2 \mu_3 \mu_4} = A_{\mu_1}^{\nu_1} A_{\mu_2}^{\nu_2} A_{\mu_3}^{\nu_3} A_{\mu_4}^{\nu_4} \delta_{\nu_1 \nu_2 \nu_3 \nu_4}^{(\mu_1 \mu_2 \mu_3 \mu_4)}$$

$V_{\mu_1 \mu_2 \mu_3 \mu_4}$ is a tensor of the 4th order. This tensor can be used to calculate the A_{μ}^{ν} depending on

the reality of the four lines determined by the equation

the reality of the four lines determined by the equation

1 - F/W

VRANCEANU, G.

Factorization of the sphere S_{2p+1} by large circles. p. 1425.
Academia Republicii Populare Romine. COMUNICARILE. Bucuresti.
Vol. 5, no. 10, Oct. 1955.

SOURCE: East European Accessions List (EEAL) Library of Congress, Vol. 5,
no. 9, Sept. 1955

✓ Véanceau, L. S. 1960. Projets à courbure constante et à courbure variable. *Arch. Math.* 11: 1-12. (1960) et French summaries.

where $\mu = \sum_{i=1}^n \mu_i$ is the net effect of the n factors. It is clear that if μ has a positive value, then the formula

It is the purpose of this paper to extend the theory of the automorphism groups of the complex projective spaces to Riemannian spaces with metric tensors of signature (n, m) . The automorphism groups of the complex projective spaces are the projective groups of the complex projective spaces. The automorphism groups of the Riemannian spaces with metric tensors of signature (n, m) are the projective groups of the Riemannian spaces with metric tensors of signature (n, m) .

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001961210012-8"

VRANIL 442 3

From the above, it follows a more direct proof of
Cortan's theorem. We make further assumption that the
space between P_0 and P_1 is empty. Then P_0, P_1
which is a point of E_1 is a point of E_2 and P_0 is a
point $P_0 \in E_2$.

1-FW

VRANCEANU, G.

About intrinsic invariants of nonholonomic spaces. p. 9.
(ANALELE. SERIA STIINTELOR NATURII. Rumania. Vol. 5, no. 11, 1956)

Vrânceanu, Gheorghe. Sur le groupe de stabilité d'un espace à connexion affine. Bull. Math. Soc. Sci. Math. Phys. R. P. Roumaine (N.S.) 1(49) (1957), 121-124.

The stability group of an affine space A_n ($\Gamma_{jk}^i = \Gamma_{kj}^i$) is the group of automorphisms which preserves a point. Expressed in normal coordinates, this group is linear homogeneous. If A_n is not euclidean this group cannot be the full group with n^2 parameters; if the A_n is Riemannian, the group is orthogonal. If A_n is not euclidean, and has a transitive group, then the stability group cannot contain the special transformation $\Sigma x^i \partial_i$.

D. J. Struik (Cambridge, Mass.)

MJI

✓

✓

VRANCEANU, G.

Spaces with affine connection and locally Euclidean, and the entire Cremonian transformations. In French. p. 111.

REVUE DE MATHEMATIQUES PURES ET APPLIQUEES. JOURNAL OF PURE AND APPLIED MATHEMATICS. (Academia Republicii Populare Romine) Bucuresti. Rumania. Vol. 2, 1957.

Monthly List of East European Accessions (EEAI) LC. Vol. 9, no. 1, January 1960.

Uncl.

VRANCEANU, G.

Linear transformations, produced by infinitesimal transformations. In Russian.
p. 341.

REVUE DE MATHÉMATIQUES PURES ET APPLIQUÉES. JOURNAL OF PURE AND APPLIED
MATHEMATICS. (Academia Republicii Populare Romine) Bucuresti, Romania.
Vol. 3, no. 3, 1958.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 7, July 1959.

Uncl.

VRANCEANU, G.

Locally Euclidean spaces of affine connection of the third class.
p. 29.

ANALELE. SERIA STINTELOR NATURII. Bucuresti, Rumania.
Vol. 7, no. 17, 1958

Monthly list of European Accessions (EEAI) LC, Vol. 8, no. 8, Aug. 1959

Uncl.

VRANCEANU, G.

Punctual transformations in two variables, linear in one of the two. p. 19.

ANALELE SERIA STINTELOR NATURII. Bucuresti, Rumania Vol. 7, no. 18, 1958.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, no. 9, Sept., 1959.

Uncl.

5498:

Vranceanu, Gheorghe, Espaces de Riemann partiellement projectifs à métrique indéfinie. Math. Nachr. 18 (1958), 123-126.

Etant donné un espace de Riemann V_n à métrique indéfinie partiellement projective d'ordre $n-m-1$, la métrique peut être écrite sous la forme

$$ds^2 = 2dx^i dx^{m+i} + 2 \frac{\partial f_p}{\partial x^i} dx^i dx^{2m+p} + a_{\alpha\beta} dx^\alpha dx^\beta$$

($i \leq m$; $\alpha, \beta > m$; $p \leq n-2m$). Dans le cas d'ordre maximum ($n=2m$) on a la forme canonique

$$ds^2 = 2dx^i dx^{m+i} - \varphi(x^i dx^{m+i})^2 + b_{\alpha\beta} dx^\alpha dx^\beta$$

où φ et $b_{\alpha\beta}$ dépendent seulement des variables x^i . Pour le cas où la métrique est définie positive voir le livre de l'auteur [Lectures on differential geometry, vol. II, Ed. Acad. R. P. Române, 1951; MR 16, 1049; ch. I].

A. Švec (Prague)

2

BSH

VR ANC-EA-N-6

16(1) PHASE I BOOK EXPLOITATION SOV/2660

Vsesoyuznyy matematicheskiy s'ezd. 3rd. Moscow, 1956
 Trudy. t. 4: Kratkoye soderzhaniye sektsionnyiy dokladov. Doklady
 inostrannikh uchenykh (Transactions of the 3rd All-Union Mathe-
 matical Conference in Moscow, Vol. 4: Summary of Sectional Reports).
 Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959.
 247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskiy institut.
 Tech. Ed.: G.M. Shabashnikov; Editorial Board: A.A. Abanov, V.G.
 Sosulin, V.A. Stepanov, Vasil'ev, B.Y. Medvedev, A.D. Myshkin, S.M.
 Nikol'skiy, A.I. Vasil'ev, A.G. Troitskov, Yu. V. Prokhorov, K.A.
 Rybnikov, P.L. Ul'yanov, V.A. Uspenskiy, M.G. Chetyrev, G.Ye.
 Shilov, and A.I. Shirshov.

PURPOSE: This book is intended for mathematicians and physicists.

COVERER: The book is Volume IV of the Transactions of the Third All-
 Union Mathematical Conference, held in June and July 1956. The
 book is divided into two main parts. The first part contains sum-
 maries of the papers presented by Soviet scientists at the Con-
 ference that were not included in the first two volumes. The
 second part contains the text of reports submitted to the editor
 by non-Soviet scientists. In those cases when the non-Soviet sci-
 entist did not submit a copy of his paper to the editor, the title
 of the paper is cited and, if the paper was printed in a previous
 volume, reference is made to the appropriate volume. The papers
 both Soviet and non-Soviet, cover various topics in number theory,
 algebra, differential and integral equations, function theory,
 functional analysis, probability theory, topology, mathematical
 problems of mechanics and physics, computational mathematics,
 mathematical logic and the foundations of mathematics, and the
 history of mathematics.

Dzhobava, E. (Poland). On spaces of sets connected in n-
 dimensions 200
 Akhiezer, N. (Poland). Certain applications of the concept
 of an open mapping 200
 Janovskiy, Ya. (Poland). Theorems on antipodes
 200
 Section on Geometry 200
 Blaschke, B. (German Federal Republic). On topological dif-
 ferential geometry 201
 Spivakovskiy, G. (Romania). Partially projective spaces (Ragan
 201
 obiect)
 Severi, P. (Italy). The irregularity of algebraic varieties. 204
 Topological problems 208
 Segre, B. (Italy). Local and general properties of the con-
 208
 Card 32/34

VRANCEANU, G.

Punctual transformations with a constant projective connection. In French.
p. 157.

REVUE DE MATHEMATIQUES PURES ET APPLIQUEES. JOURNAL OF PURE AND APPLIED
MATHEMATICS. Bucuresti, Rumania. Vol. 4, no. 1, 1959.

Monthly List of East European Accessions. (EEAI), LC. Vol. 8, no. 9, Sept. 1959.
Uncl.

VRANCEANU, G.

Tiberiu Mihailescu's Geometrie diferentiala proiectiva (Projective Differential Geometry); a book review. Rev math pures 4 no.3: 485-488 '59. (EEAI 10:9)

1. Membre de l'Academie de la Republique Populaire Roumaine; Comite de redaction, Revue de mathematiques pures et appliquees.

(Mihailescu, Tiberiu) (Geometry, Differential)
(Romania--Bibliography)

VRANCEANU, G., acad.

Determining the commutative discreet groups of the affine plane.
Rev math pures 4 no.4:555-575 '59. (EEAI 10:9)

1. Comite de redaction, "Revue de mathematiques pures et appliquees".

(Geometry) (Transformations(Mathematics))
(Spaces, Generalized) (Abelian groups)